

Serial No. 10/050,600  
Docket No. P14979-A  
(YAM.046)

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### REMARKS

Entry of this response under 37 C.F.R. §1.116 because no new claims or issues are raised and the only substantive claim amendments incorporate subject matter indicated as allowable into rejected claims.

Claims 3-5, 8-16, and 23-39 are all the claims presently pending in the application.

Applicant acknowledges and appreciates that claims 11-16 and 23-27 are allowed and claim 35 is allowable. For the reasons set forth below, however, Applicant respectfully submits that all of the pending claims are allowable over the prior art of record.

**Claims 3 and 8** stand rejected under 35 U.S.C. 102(e) as being anticipated by Gelman et al. (US 6,493,348) (hereinafter Gelman). **Claims 5 and 10** stand rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (US 6,765,910). **Claims 4, 9, 28-30, 32-34, and 36-39** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gelman in view of Johnson. **Claim 31** stands rejected under 35 U.S.C. 103(a) as being unpatentable over Gelman in view of Johnson and further in view of Ofek (U.S. Patent No. 6,760,328).

These rejections are respectfully traversed below.

### **I. THE CLAIMED INVENTION**

Claim 3, 8, and 28 similarly recite a demultiplexing method and apparatus for receiving a multiplexed signal. The multiplexed signal is obtained by multiplexing a plurality of communication signals from a multiplexed signal transmitting section, demultiplexing the multiplexed signal into communication signals, and transmitting the demultiplexed communication signals to a communication signal receiving section. The method of receiving a multiplexed signal includes adding an identification address to each of the plurality of communication signals. The identification address is preassigned to a predetermined signal identifying section, through which a communication signal passes in a

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multiplexing system including the multiplexed signal transmitting section and the communication signal receiving section. The method of receiving a multiplexed signal also includes outputting each of the communication signals, extracting the identification address from each of the output signals, demultiplexing the multiplexed signal for each of the communication signals on the basis of the extracted identification address, and transferring, when the communication signals include a data packet, the data packet to a first interface block, and when the communication signals includes a control packet, transferring the control packet to a PPP processor. In addition, claim 28 provides that the communication signal comprises a PPP packet in an Ethernet frame packet or an IEEE 802.3 frame packet.

Claims 5 and 10 similarly recite a demultiplexing method and apparatus for demultiplexing a multiplexed signal obtained by multiplexing a plurality of packets into packets. The method includes extracting an IP address from each packet in the received multiplexed signal for each of the plurality of packets, the IP being preassigned to a predetermined signal identifying section through which a communication signal passes, and demultiplexing the multiplexed signal into PPP packets on the basis of the extracted IP addresses. When the communication signals in a multiplexed signal received from said demultiplexing apparatus through a second interface block includes a data packet, the data packet is transferred to a first interface block on the basis of an IP address of the communication signals, and the packet is transferred to a backbone network upon converting the packet into a POS signal. When the communication signals in a multiplexed signal received from said demultiplexing apparatus through a second interface block includes a control packet, the control packet is transferred to a PPP processor on the basis of an IP address of a control packet.

Claim 30 recites, among other things, an access network system for performing PPP processing by using a medium access control (MAC) layer, including a computer, a

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subscriber apparatus connected to the computer, the subscriber apparatus adding a PPP (Point-to-Point Protocol) header and an MAC frame header to an IP packet transmitted from the computer to form a frame packet, a subscriber multiplexing/demultiplexing apparatus connected to the subscriber apparatus, an access gateway connected to the subscriber multiplexing/demultiplexing apparatus, the access gateway being associated with a backbone network, and an output Ethernet interface block configured to receive a signal, extract a frame packet and the MAC address contained in the signal, and transfer the extracted frame packet and the MAC address in the signal to a packet switch module. The output Ethernet interface block refers to a value indicated by a protocol field of a PPP packet in an extracted frame packet and performs a first discrimination of the PPP packet extracted from the signal as a PPP data packet and a second discrimination of the PPP packet extracted from the signal, and then supplies a discrimination result to a packet switch module. The packet switch module performs switching with respect to the frame packets on a basis of the MAC addresses and discrimination results transferred from the output Ethernet interface block, and performs switching with respect to PPP packets on a basis of the IP addresses transferred from the input interface block. The MAC frame header comprises an MAC address, the MAC address including a source identification address including an identification address of a predetermined identification section through which a communication signal passes in a multiplex system at which a signal is output from the subscriber apparatus and a predetermined destination identification address including an identification address of a signal identification section through which a communication signal passes in the multiplex system to which a signal is input into the subscriber multiplexing/demultiplexing apparatus.

A conventional multiplex communication apparatus, however, requires a discrimination apparatus for an Asynchronous Transfer Mode function that must be installed

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at an entrance to a backbone network. In addition, for new subscribers, a new discrimination apparatus must be installed for each new subscriber, creating additional cost and complexity.

The present invention, however, provides, "transferring, when the communication signals include a data packet, the data packet to a first interface block, and when the communication signals include a control packet, transferring the control packet to a PPP processor" as recited in claim 1. These features provide a simpler arrangement for PPP processing. (See Application, Page 7, Line 17 to Page 8, Line 5)

As the number of subscribers who access the Internet increases, an apparatus for performing Point-to-Point Protocol (PPP) processing connection of the subscribers to the backbone network of the Internet must be added. Such an apparatus may be installed in a place as near to the subscribers as possible to avoid complication of the PPP, complication of the system, and complication of a management system for the system. See the Application, Page 6, Line 7 to Page 7, Line 4.

## II. THE PRIOR ART REJECTIONS

On pages 2 and 7 of the Office Action, the Examiner rejects claims 3, 8, and 30 under 35 U.S.C. 102(e) as being anticipated by Gelman. Then, on page 3 of the Office Action, the Examiner alleges that Johnson discloses the claimed invention of claims 5 and 10.

While Applicant disagrees with the Examiner's rejections of independent claims 3, 5, 8, 10, and 30, Applicant has amended these claims to contain the allowable subject matter of independent claims 11, 14, 23, and 26. In particular, independent claim 3, for example, now recites, among other things, "transferring, when the communication signals includes a data packet, the data packet to a first interface block, and when the communication signals includes a control packet, transferring the control packet to a PPP processor."

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Accordingly, Applicant submits that independent claims independent claims 3, 5, 8, 10, and 30 define patentable subject matter over each of Gelman and Johnson, either alone or in combination.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections.

### III. CONCLUSION

In view of the foregoing, Applicant submits that claims 3-5, 8-16, and 23-39, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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